

**AMENDMENT TO THE CLAIMS**

1-30. (Cancelled)

31. (Currently amended) A method for forming a shallow junction comprising the steps of:

forming an amorphous layer at a shallow region in a silicon substrate by irradiating a plasma containing He; and

introducing ~~boron~~ an impurity by applying a plasma to the shallow region of the silicon substrate; and

applying light having an intensity peak at a wavelength of 375nm or longer on the silicon substrate so that said shallow region is excited selectively and the shallow junction is formed electrically activated with the impurity ~~boron~~.

32. (Canceled)

33. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the plasma is comprised mainly of He.

34. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the plasma consists of He.

35. (Canceled)

36. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is  $\lambda(\text{nm})$  and light absorption ratio is  $A(\%)$ , the light absorption rate of a layer which is formed by introducing the ~~boron~~ impurity into the substrate satisfies at least one of following conditions:

- at the wavelength ranging from 375 nm (inclusive) to 500 nm,  $A > 7E32\lambda^{-12.316}$ ;
- at the wavelength ranging from 500 nm (inclusive) to 600 nm,  $A > 2E19\lambda^{-7.278}$ ;
- at the wavelength ranging from 600 nm (inclusive) to 700 nm,  $A > 4E14\lambda^{-5.5849}$ ; and
- at the wavelength ranging from 700 nm (inclusive) to 800 nm,  $A > 2E12\lambda^{-4.773}$ .

37. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is  $\lambda(\text{nm})$  and absorption coefficient is  $\alpha(\text{cm}^{-1})$ , the light absorption coefficient of a layer which is formed by introducing the ~~boron~~ impurity into the substrate satisfies at least one of following conditions:

- at the wavelength ranging from 375 nm (inclusive) to 500 nm,  $\alpha > 1E38\lambda^{-12.505}$ ;
- at the wavelength ranging from 500 nm (inclusive) to 600 nm,  $\alpha > 1E24\lambda^{-7.2684}$ ;
- at the wavelength ranging from 600 nm (inclusive) to 700 nm,  $\alpha > 2E19\lambda^{-5.5873}$ ; and
- at the wavelength ranging from 700 nm (inclusive) to 800 nm,  $\alpha > 1E17\lambda^{-4.7782}$ .

38-39. (Canceled)

40. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the step of applying light is a step of irradiating light having an intensity peak at wavelength longer than 375 nm (inclusive) and shorter than 800 nm (inclusive).

41. (Previously presented) The method for forming a shallow junction according to claim 40, wherein the light having the intensity peak at the wavelength longer than 375 nm (inclusive) and shorter than 800 nm (inclusive) is a xenon flash lamp light.

42. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the silicon substrate is a substrate having a (100) plane or the silicon substrate comprises a plane inclined from the (100) plane by several degrees.

43. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is  $\lambda$ (nm) and absorption ratio is A (%), the light absorption ratio of a layer into which the impurity boron is introduced for light having a wavelengths longer than 375 nm (inclusive) and shorter than 800 nm (inclusive) satisfies  $A > 1E19\lambda^{-6.833}$ .

44. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is  $\lambda$  (nm) and absorption coefficient is  $\alpha$  ( $\text{cm}^{-1}$ ), the light absorption coefficient of a layer into which the impurity boron is introduced to light having wavelengths longer than 375 nm (inclusive) and shorter than 800 nm (inclusive) satisfies  $\alpha > 1E19\lambda^{-7.1693}$ .

45. (Currently amended) The method for forming a shallow junction according to claim 31, wherein the step of introducing the impurity boron is a step of introducing the impurity boron by plasma doping.

46. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the substrate is a SOI substrate with a Silicon thin film formed on a surface thereof.

47. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the substrate is a strained Si substrate with a Si film formed on a surface thereof.

48. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the substrate is a glass substrate with a poly-Si thin film formed on a surface thereof.

49. (Previously presented) A processed material formed by the method for forming a shallow junction according to claim 31.

50. (New) The method for forming a shallow junction according to claim 31, wherein the impurity includes boron.

51. (New) The method for forming a shallow junction according to claim 31, wherein the substrate includes a single crystalline silicon substrate.